

# HANFORD FORWARD

CENTRAL PLATEAU

## Lower-risk Work Underway at Hanford's Plutonium Finishing Plant



TANKS

## Lab Demonstration Successfully Vitrifies Hanford Tank Waste



SITEWIDE

## Hanford Site Cleanup by the Numbers



FALL 2018 ISSUE

QUARTERLY PUBLICATION COVERING  
HANFORD CLEANUP NEWS & PROGRESS





# ABOUT HANFORD



**RICHLAND  
OPERATIONS OFFICE**  
United States Department of Energy

The Richland Operations Office is responsible for cleanup of much of Hanford's waste, including preparing to move radioactive "sludge" away from the Columbia River, disposing of contaminated soil and solid waste, and treating groundwater, while providing occupational medical services and maintaining site infrastructure for the future.



CH2M HILL Plateau Remediation Company (CHPRC) is the prime contractor for the safe, environmental cleanup of the Central Plateau. CHPRC's responsibilities include waste retrieval and fuels management, groundwater remediation and demolition of facilities and canyons, and closure of the Plutonium Finishing Plant.

**HPMC** OCCUPATIONAL  
MEDICAL SERVICES

HPMC Occupational Medical Services provides occupational medical services to the Department of Energy and to Hanford employees.



Mission Support Alliance (MSA) is responsible for integrated infrastructure services for the Hanford cleanup mission, including roads and transportation services, electrical and water services, facility maintenance, emergency response (fire and patrol) services, network and software engineering as well as environmental compliance and clean energy solutions.



The Office of River Protection is responsible for the retrieval, treatment, and disposal of Hanford's tank waste in a safe, efficient manner. The River Protection Project is the largest and most complex environmental remediation project in the nation.



Bechtel National Inc. is responsible for designing, building and commissioning the world's largest radioactive and chemical waste treatment plant. When completed, the plant will be used to solidify waste stored in 177 aging underground tanks using a process called vitrification.



Washington River Protection Solutions is responsible for storing and retrieving the approximately 56 million gallons of radioactive and chemical waste stored in Hanford's tanks.



VNS Federal Services is the prime contractor responsible for managing the 222-S Laboratory.

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*In August 2018, Plutonium Finishing Plant workers conducted mock-ups of waste load out activities during a Management Assessment to determine preparedness to resume demolition-related activities.*



# LOWER-RISK WORK UNDERWAY

## AT HANFORD'S PLUTONIUM FINISHING PLANT

**Demolition-related activities are underway at the Plutonium Finishing Plant (PFP) on the Hanford Site. In September, crews began loading out demolition debris that have been on the ground since December 2017, when work stopped after a spread of low-level radioactive contamination.**

Since the contamination spread, the Department of Energy (DOE) and contractor CH2M HILL Plateau Remediation Company (CHPRC) performed recovery actions and developed a revised demolition strategy.

"The new strategy and enhanced safety controls will help protect workers, the public and the environment," said Tom Teynor, DOE federal project director. "Additional oversight from DOE and the contractor will ensure those controls are protected."

Resumption of work will occur in two phases. The first phase involves the two lower-risk activities: processing and packaging of existing debris from the main processing facility demolition, followed by the demolition of the remaining lower-risk portions of the main processing facility and an associated vault.

Following another management assessment (with DOE oversight), and DOE and regulatory approval, the second





**ABOVE & RIGHT:** On September 27, Plutonium Finishing Plant workers began loading out debris already on the ground, which is the first of the lower-risk activities to occur as demolition resumes.

phase consisting of higher-risk work will begin. The higher-risk work includes demolishing the main processing facility's two former processing lines and the tunnels beneath as well as removing the remaining rubble from the Plutonium Reclamation Facility demolition. **This animation** shows the revised demolition approach and enhanced controls, which reflect worker input. Pauses are built into the schedule to review lessons learned and incorporate additional input before moving forward.

"I want to thank the PFP team for providing valuable input into the plan," said Jason Casper, demolition resumption manager for Jacobs, parent company of CHPRC. "Our key goal while moving forward is to perform the work safely and compliantly."

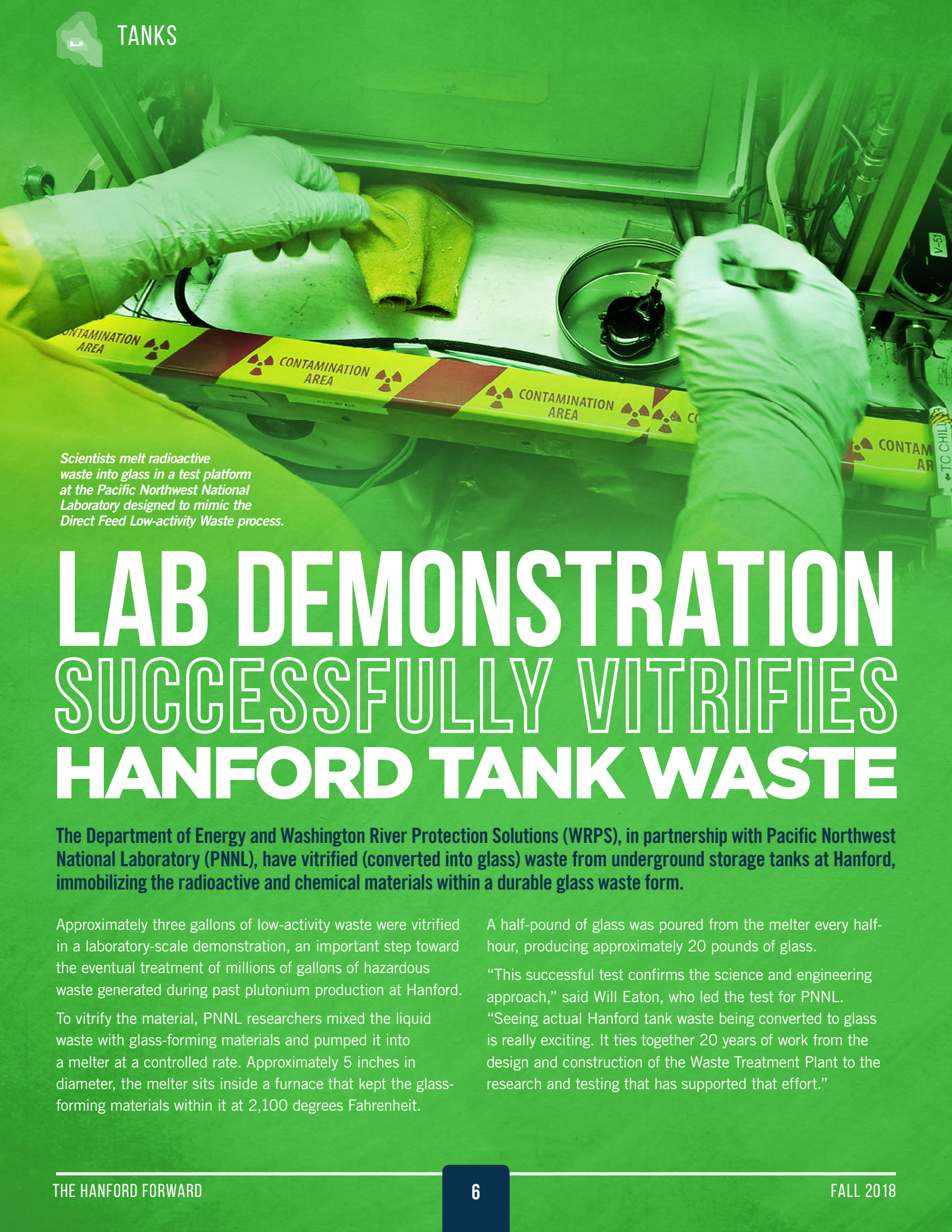
DOE will post weekly updates on the PFP [information webpage](#). \*



**"THE NEW STRATEGY AND ENHANCED SAFETY CONTROLS WILL HELP PROTECT WORKERS, THE PUBLIC AND THE ENVIRONMENT."**

— Tom Teynor, Department of Energy  
federal project director





*Scientists melt radioactive waste into glass in a test platform at the Pacific Northwest National Laboratory designed to mimic the Direct Feed Low-activity Waste process.*

# LAB DEMONSTRATION SUCCESSFULLY VITRIFIES HANFORD TANK WASTE

**The Department of Energy and Washington River Protection Solutions (WRPS), in partnership with Pacific Northwest National Laboratory (PNNL), have vitrified (converted into glass) waste from underground storage tanks at Hanford, immobilizing the radioactive and chemical materials within a durable glass waste form.**

Approximately three gallons of low-activity waste were vitrified in a laboratory-scale demonstration, an important step toward the eventual treatment of millions of gallons of hazardous waste generated during past plutonium production at Hanford.

To vitrify the material, PNNL researchers mixed the liquid waste with glass-forming materials and pumped it into a melter at a controlled rate. Approximately 5 inches in diameter, the melter sits inside a furnace that kept the glass-forming materials within it at 2,100 degrees Fahrenheit.

A half-pound of glass was poured from the melter every half-hour, producing approximately 20 pounds of glass.

“This successful test confirms the science and engineering approach,” said Will Eaton, who led the test for PNNL.

“Seeing actual Hanford tank waste being converted to glass is really exciting. It ties together 20 years of work from the design and construction of the Waste Treatment Plant to the research and testing that has supported that effort.”



The test was the most recent in a series using the PNNL-designed test platform and actual tank waste to mimic key processes to be used in the Direct Feed Low-activity Waste process at Hanford. The direct-feed approach will remove solids and radioactive cesium from tank waste and send the resulting low-activity waste to the Hanford Tank Waste Treatment and Immobilization Plant for vitrification inside large melters.

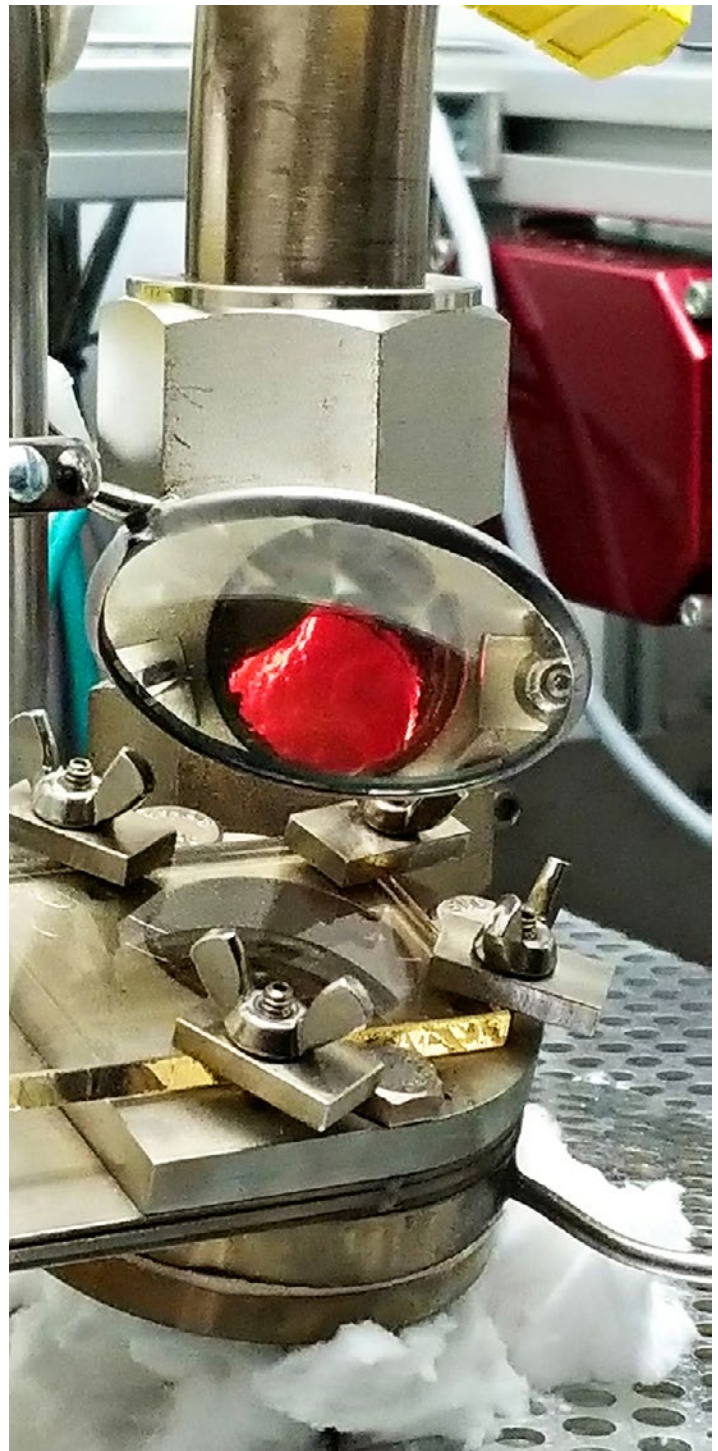
In tests leading up to the vitrification, the tank waste was pretreated inside a PNNL hot cell. There, researchers used filters to remove solids and cesium, leaving a low-activity solution containing dissolved waste.

Gases generated during the vitrification process produced a liquid when condensed, which will be concentrated and grouted later in another related test. The grouted material will then be analyzed to ensure it meets disposal requirements.

A second laboratory-scale vitrification test is planned later this year using about two gallons of low-activity waste. Pretreatment of that waste will test different filtration methods. \*

**“BEING ABLE TO RUN REAL TANK WASTE INSTEAD OF SIMULANT THROUGH THESE TESTS PROVIDES VALUABLE INPUT FOR VALIDATING AND REFINING OUR APPROACH TO THE TREATMENT OF LOW-ACTIVITY WASTE. IT’S ANOTHER IMPORTANT STEP TOWARD THE REMOVAL AND DISPOSAL OF A LARGE PORTION OF HANFORD’S TANK WASTE.”**

– *Kris Colosi, project manager for Washington River Protection Solutions*



*Low-activity radioactive tank waste from an underground storage tank at Hanford is illuminated by molten glass, as it is vitrified (converted into glass). This is a similar process to the Direct Feed Low-activity Waste process that will be used at Hanford.*





## Hanford Site Cleanup By the Numbers

The Hanford Site sits on 580 square miles of desert in southeastern Washington state, adjacent to the Columbia River. From 1943 to 1987, chain reactions inside Hanford's nine nuclear reactors changed uranium's chemical composition by exposing it to extra neutrons, producing plutonium that went into nuclear weapons used during World War II and were stockpiled during the Cold War.

Hanford's last reactor was shut down in 1987, but 44 years of plutonium production at the site generated millions of tons of solid waste and contaminated soil, as well as billions of gallons of contaminated liquids. In 1989, the Energy Department's current mission at Hanford — cleaning up the waste — began.

**6** of Hanford's nine reactors have been cocooned — demolished down to the reactor core and enclosed in cement and steel. With this process, the radioactivity in the reactors will continuously and safely decrease over many decades, making the reactor cores easier and safer to dismantle in the future.

**2** more reactors will be cocooned in coming years, with the final - B Reactor - remaining as a National Historical Landmark.

**100%** — or about 2,300 tons — of the site's spent fuel, a type of radioactive waste, has been removed from areas around the Columbia River and placed in safe, secure dry storage.

**18.5M** tons of soil and debris disposed of in the Environmental Restoration Disposal Facility, the Hanford Site's engineered and regulated landfill, which covers an area of 107 acres — about the size of 52 football fields.

**12.5K** cubic meters of waste stored underground has been removed for disposal.

**889** facilities, many contaminated, have been demolished.

**1,342** waste sites, including hundreds along the Columbia River's south shores, have been remediated — or cleaned of pollution and contaminants — to ensure future protection of human health and the surrounding environment.

**7.5M** gallons of pumpable liquid waste have been removed and transferred from underground single-shell tanks to safer double-shell tanks, completing the interim stabilization project for the 149 single-shell tanks. These tanks vary in size from 55,000 to 1 million gallons each.

**>3M** gallons of chemical and radioactive thick sludge and saltcake waste have been retrieved from 17 single-shell tanks and one double-shell tank, reducing the risk to workers and the environment.

**20B** gallons of contaminated groundwater have been treated in facilities along the Columbia River and in the center of the Hanford Site.





*Hanford tank farm workers are committed to safety, recently logging more than 8 million hours without a lost-time injury.*

# STRONG SAFETY CULTURE KEEPING WORKERS SAFE AT HANFORD TANK FARMS

**Hanford tank farms employees for the Department of Energy's (DOE) Office of River Protection are working safer than at any time since safety statistics have been available for the farms – since the beginning of 1991.**

Hanford tank operations contractor Washington River Protection Solutions (WRPS) is the DOE's tank operations contractor at Hanford, and is responsible for safely managing the underground tanks storing radioactive and hazardous waste and for preparing for retrieval and treatment of that waste.

As of September 19, WRPS had eclipsed 8.3 million safe hours (589 days) without a lost-time injury, a record stretch for the company.

Former WRPS President and Project Manager Mark Lindholm said the company has become nationally recognized for innovative safety tools and programs, noting the company has earned four consecutive Voluntary Protection

**“THIS PUTS US AMONG THE SAFEST PERFORMING CONTRACTORS IN THE DOE COMPLEX, DESPITE THE CHALLENGES AND HAZARDS WE FACE EVERY DAY.”**

**— Mark Lindholm,  
former president and project  
manager for Washington River  
Protection Solutions**

Program (VPP) Innovation Awards. The most recent, was for developing and implementing a suite of innovative tools that greatly reduce radiological and industrial hazards to workers. The tools' success was realized thanks to strong employee engagement, teamwork and commitment to safety.

WRPS won the 2017 VPP Innovation Award for a program that helped eliminate heat stress cases in the tank farms.

The company won the 2016 VPP Innovation Award for developing a face shield that protects a worker wearing full face respiratory equipment from an arc flash, and the 2015 award for developing a tool to help reduce worker exposure during surveys of radioactive equipment.

WRPS has been a DOE VPP Star Site, the federal government's highest workplace safety designation, since 2014. Star Sites have injury and illness rates well below industry averages, and exemplary safety and health programs. ✱





*The first sludge transport and storage container leaves the K Basin on its way to T Plant for safe storage away from the Columbia River.*

# CREWS SHIP SLUDGE AWAY FROM COLUMBIA RIVER

The U.S. Department of Energy (DOE) and contractor CH2M HILL Plateau Remediation Company (CHPRC) are moving highly radioactive sludge from temporary storage near the Columbia River.

Highly radioactive sludge is on its way to safer storage on the Central Plateau. Crews are safely shipping K West Reactor Basin sludge away from the Columbia River to safer storage at T Plant.

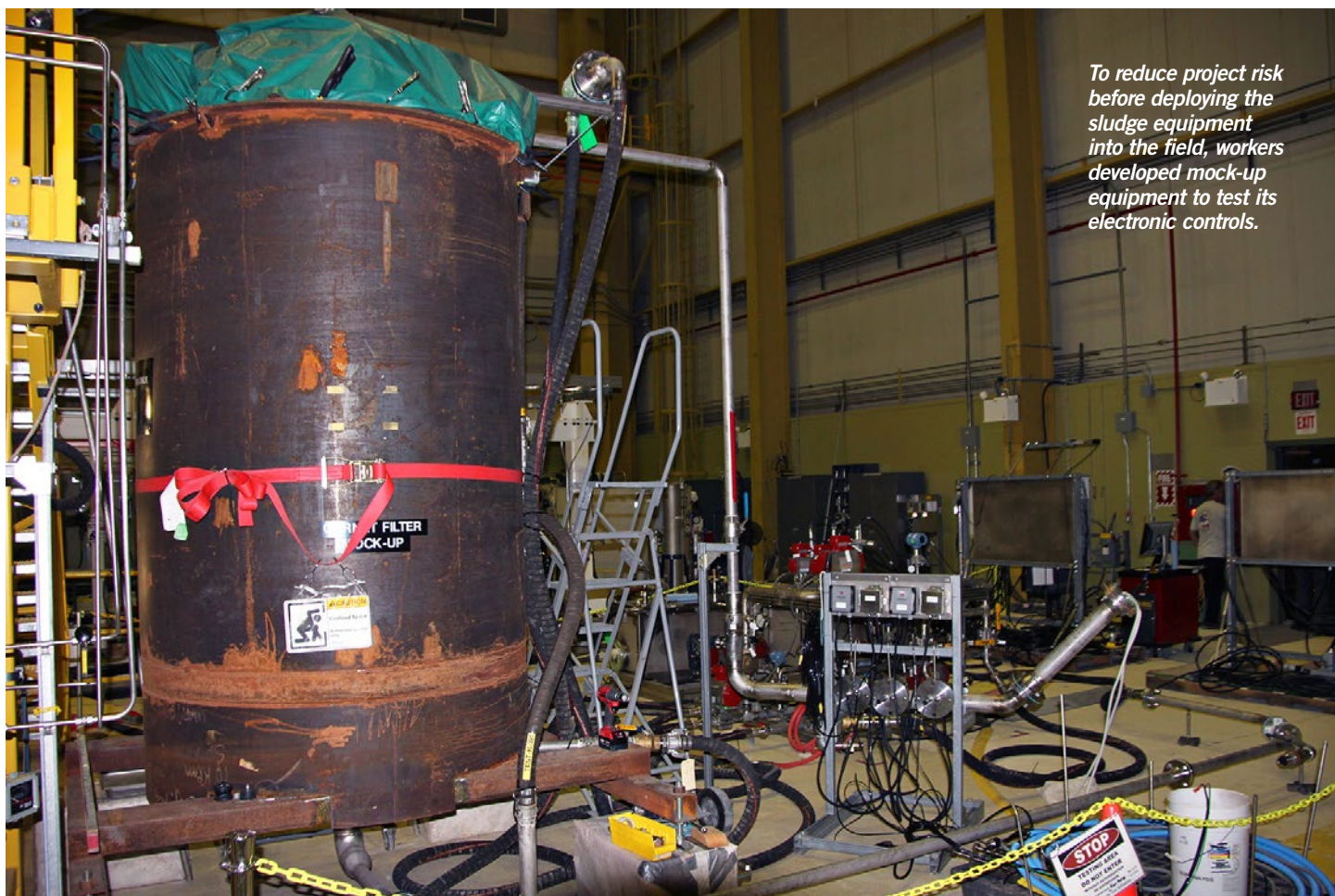
Crews are filling specially designed containers for transporting sludge from the water-filled basin to T Plant. After workers

finish the sludge retrieval, they will remove the contaminated filter media that once helped clean the water. Recently, workers tested this process using the same mock-up facility they had used to test the sludge removal equipment.

**“SLUDGE REMOVAL, AND EVENTUAL REMOVAL OF THE FILTER MEDIA, ARE ALL KEY STEPS TOWARD REMOVING WATER FROM THE BASIN AND DEMOLISHING THE BASIN. TESTING THIS EQUIPMENT IN A CLEAN ENVIRONMENT IS CRITICAL TO ENSURING THE PROJECT’S SUCCESS.”**

*— Mark French, federal project director*





*To reduce project risk before deploying the sludge equipment into the field, workers developed mock-up equipment to test its electronic controls.*

Over the next year, workers will ship about two dozen containers of sludge to T Plant as crews retrieve the 35 cubic yards of sludge from the reactor basin, leading to the eventual decommissioning of the K West Reactor. The sludge will remain at T Plant until a decision is made on its final disposition. Sludge removal is expected to be complete in 2019. ✱



*CH2M HILL Plateau Remediation Company engineering technician Jeff Akers reviews controls during testing of equipment to remove filter media from the K West Reactor Basin.*





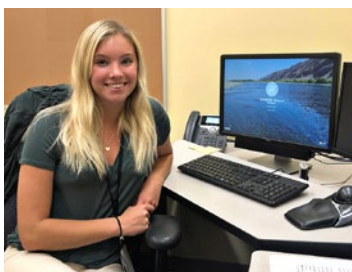
# OPPORTUNITIES ABOUND FOR INTERNS AT HANFORD

Real-world experience, networking and future opportunities. That's what many of the college interns working on the Hanford Site are looking to gain. Whether here during their summer break or working part time during the school year, these interns have learned what it takes to be a part of the next generation of Hanford workers. Here's a snapshot of some 2018 interns:



**Blake Binns** was a sophomore at the University of Washington and a summer intern at contractor Bechtel National Inc. with the electrical engineering department. His focus has been working on drawings, procurement and documentation for the power supply for the melters at the Low-activity Waste Facility being constructed at the Hanford Tank Waste Treatment and Immobilization Plant. His work this summer, he said, has solidified his interest in pursuing an electrical engineering degree. His internship has also been an opportunity for him to learn about the history at Hanford and how his role plays a part in the cleanup mission.

"Being from around here, it's a mission that I care about," he said.



**Karsyn Suhadolnik** was a summer intern with contractor CH2M HILL Plateau Remediation Company. She's a sophomore at the University of Washington studying biochemistry and business marketing. During her 12-week internship, she worked in the company's finance department lending a hand with electronic records, assisting with audits and shadowing a different person each week.

"I've enjoyed making connections and getting to know people out here. The experience was amazing. I hope to come back and continue my future at Hanford," she said.



**Chandler Bethley**, standing in front of a Hanford history display she helped put together, was a summer intern with the Department of Energy Richland Operations Office. She is a senior at Central Washington University studying business administration and plans to graduate in March 2019. When she started at Hanford in 2016 she did not know much about the site, but knew it was a big part of the community and was curious about how it all worked. "Now having been out here for the last three summers, I have a better understanding of Hanford's history and what is ahead for the future," she said. She enjoyed supporting internal communications, public meetings and the Hanford Advisory Board, as well as working with her team members.



**Joe Cort** is a co-op intern with contractor Mission Support Alliance and a senior at Washington State University Tri-Cities, pursuing a bachelor's degree in electrical engineering. He's been on the Hanford Site since 2017 and supported the site's network, radio, telephone, paging, and cell phone systems.

"I appreciate the hands-on experience that an internship has to offer that you don't get from the academic setting. There's also interacting with other professionals in my field and learning their skills as well," said Cort. He plans to graduate in May 2019 and is hoping to continue his career at Hanford.



**Ryan Houghton** was a summer intern with contractor Washington River Protection Solutions, supporting their Process and Control Systems Engineering department. He is a senior at Eastern Washington University pursuing a degree in computer programming and software development. Over the course of his internship, he had hands-on experience with projects his department worked on and found the application of his classroom studies to be "a very enlightening experience."

"We're not just being taught the job, but we're doing the job as well. This is a good place to apply what I've learned in school," he said.





*Concrete blocks rest atop a transport vehicle in preparation for a test drive to evaluate potential acceleration effects during the future movement of spare melters for the Hanford Tank Waste Treatment and Immobilization Plant Low-Activity Waste vitrification facility.*

## A Different Kind of Test Drive

**“Slow but steady” is winning advice if you’re the tortoise racing the hare. It’s also a requirement when transporting a 600,000-pound melter that one day will vitrify (convert to glass) tank waste at Hanford.**

The Department of Energy and contractor Washington River Protection Solutions (WRPS) are in the early stages of planning for the assembly and movement of spare melters for the Hanford Tank Waste Treatment and Immobilization Plant (WTP) Low-activity Waste (LAW) vitrification facility. The facility’s two installed melters have an expected operating life of at least five years, after which replacement is anticipated.

A crew recently loaded several massive concrete blocks on a 72-wheel vehicle that will eventually transport the spare melter and took it for a 23-mile test drive (that reached a top speed of approximately 3 miles per hour) from north Richland to near the WTP facility.

Teams are evaluating potential effects to the spare melter caused by transporting it to WTP for its installation. Inside the melter is a lining of freestanding ceramic blocks, called refractory, that serves as an insulating barrier during the vitrification process. Unlike the first two melters, which had the refractory blocks inserted at the LAW facility, the spare melters will require assembly in a separate facility and then transport to the LAW facility.

“When the melter is assembled, those blocks, because they’re freestanding, can slide around and move inside, if subjected to

large enough accelerations,” said WRPS project engineer Alan Carlson. “The melter can only move with accelerations at a certain level. If you exceed that level, the blocks may slide or possibly tip, so you want to prevent that. We want to make sure any acceleration the blocks see are below a limit that we have set.”

“A sudden change in speed or direction isn’t the only cause of acceleration. Potholes, train tracks, sharp turns, even engine vibration can cause accelerations within the melter interior,” Carlson said.

Instrumentation attached to the concrete blocks measured acceleration forces and other important variables during their transport. Preliminary review of the results show the test was performed within the acceleration limits. The test data will be included in planning for the eventual assembly and movement of the spare melters.

“We were pleased with the success of the melter transport test,” said Joe Renevitz, DOE Maintenance and Operations engineer. “This showed that a fully assembled spare melter can be safely delivered to the Low-activity Waste vitrification facility to support continued operations.” ✱





# WATER SYSTEM PROJECT

## WILL IMPROVE CRITICAL HANFORD INFRASTRUCTURE

*Nearly 400 million gallons of water are used annually on the Hanford Site, primarily for operations, construction, waste processing, and fire protection. A new water line will improve the reliability and redundancy of the raw water supply needed to support long term operations and tank waste treatment processes.*

**To support the long-term cleanup of the Hanford Site, the Department of Energy and Hanford contractor Mission Support Alliance (MSA) recently began work on a \$7.8 million water system improvement project.**

The bulk of the work will be the installation of a new pipeline that will connect the separate water grids of the east and west areas in the center of the Site. The installation of approximately four miles of 30-inch pipe is expected to be complete in spring 2019.

“With about 9,000 workers, many near the center of the site where this project takes place, ensuring the dependability of the water system is key,” said Jeff Frey, DOE assistant manager for mission support.

Nearly 400 million gallons of water are used annually on the Hanford Site, primarily for operations, construction, waste processing, and fire protection. In addition to the pipeline installation, other upgrades will include the installation of a backup water supply line to a water treatment facility in the west area in the center of the site.

“This is a large-scale and critical project for Hanford’s water needs, which will last for many years. We’re excited to see this project through to completion,” said Dan Parr, MSA project manager.

Once construction of the water line is complete, workers will revegetate disturbed areas with native grasses and shrubs to restore the environment closely to its original state, and they will install wild bee habitats to encourage pollination of revegetated areas. \*



***To support the long-term cleanup of the Hanford Site, the Department of Energy and Hanford contractor Mission Support Alliance recently began work on a \$7.8 million water system improvement project. The project, which is taking place near the center of the site, will ensure the dependability of the water system for years to come.***





*Workers from Hanford Site contractor CH2M Hill Plateau Remediation Company treated 2.2 billion gallons of groundwater this fiscal year, which resulted in the removal of more than 90 tons of contaminants.*

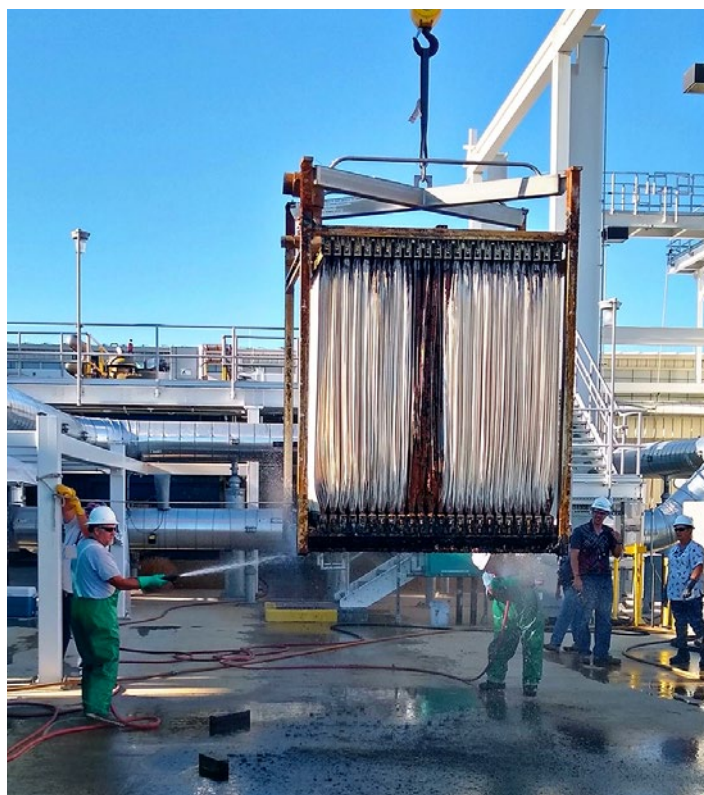
# SOIL & GROUNDWATER TEAM SET RECORDS

**The U.S. Department of Energy (DOE) and contractor CH2M HILL Plateau Remediation Company (CHPRC) reached groundwater treatment goals and set records in Fiscal Year 2018.**

CHPRC's Soil and Groundwater Remediation Project team met DOE's annual goal of treating 2.2 billion gallons of groundwater seven weeks early. Groundwater treatment resulted in the removal of more than 90 tons of contaminants during the year.

The 200 West Pump and Treat Facility, the largest groundwater treatment facility at Hanford and one of the largest in the DOE complex, demonstrated its maximum design capacity of treating 2,500 gallons per minute and hit an all-time high for the amount of water treated in one month, after treating more than 295 million gallons in January.

"Treating 2.2 billion gallons is not our only success this year. I am proud of the team's many accomplishments that wouldn't have been possible without their innovation and efficiencies," said John Rendall, vice president of CHPRC's Soil and Groundwater Remediation Project. \*



**ABOVE & LEFT:** Workers clean a filter used to treat the groundwater at the 200 West Pump and Treat facility.





## HANFORD SITE PUBLIC TOUR OUTREACH PROGRAM TOPS 330 VISITORS DURING TOUR SEASON

*Tour guide Gerry Griffin, right, explains to tour participants how contaminants are removed from groundwater at the 200 West Pump and Treat facility.*

**More than 330 visitors from across the country checked 'tour the Hanford Site' off their summer bucket list this year. The tours are part of the Department of Energy's outreach program to educate the public about Hanford.**

This year's tour route included a stop at the Cold Test Facility, which is a scaled version of one of Hanford's 177 underground nuclear waste storage tanks, and the 200 West Pump and Treat facility, a facility that removes chemical, radioactive and organic contaminants from groundwater.

Tour participants also received briefings on the 324 Building Disposition Project, the Sludge Removal Project at the K West Reactor and the Hanford Tank Waste Treatment and Immobilization Plant.

The dates for next year's public tours will be announced in the spring. \*

hanford site  
cleanup **TOURS**



*Members of the public view a model of an underground waste storage tank at the Cold Test Facility, the first stop on one of this year's Hanford Site cleanup tours.*





AVANTech's ion-exchange columns at the Fukushima Daiichi nuclear power plant in Japan.

## NEW WASTE PRETREATMENT CAPABILITY —TO ENABLE VITRIFICATION—

**Hanford tank farms contractor Washington River Protection Solutions (WRPS) recently awarded a subcontract to AVANTech, Inc., to design and build a new tank waste pretreatment facility near the tank farms.**

The Tank-Side Cesium Removal demonstration project will separate both cesium and solid materials from tank waste, providing a low-activity waste stream that will be sent to the Hanford Tank Waste Treatment and Immobilization Plant's Low-activity Waste Facility for vitrification (conversion into glass).

The project relies on a technology successfully deployed at several locations worldwide, including the Oak Ridge Site in Tennessee and the Fukushima Daiichi nuclear power plant cleanup in Japan. It uses a design concept similar to that of a unit built for the Savannah River Site in South Carolina.

The Department of Energy (DOE) expects the project to be ready to deliver pretreated low-activity waste to the Low-activity Waste Facility by December 2023 or sooner, to support the Direct Feed Low-activity Waste approach.

The cesium removal project will filter waste to remove solids and then process the waste through a series of ion-exchange columns that will remove cesium. The resulting low-activity

waste solution will be pumped to a tank for storage until it can be sent to the Low-activity Waste Facility.

The project is expected to pretreat approximately 5 million gallons of waste to support the initial operation of the Low-activity Waste Facility. The ion exchange columns will be replaced periodically, with the used columns to be safely stored at a nearby interim storage facility. \*

**“THIS EFFICIENT AND COST-EFFECTIVE TECHNOLOGY IS A KEY STEP TOWARD ENABLING THE DEPARTMENT OF ENERGY TO BEGIN PRETREATING WASTE AS SOON AS POSSIBLE.”**

— Glyn Trenchard, DOE assistant manager for Tank Farms





# THREE HANFORD SITE CONTRACTORS RECOGNIZED FOR EFFORTS IN PROCUREMENT OF SUSTAINABLE ELECTRONICS

*Left to right: For the second consecutive year, three Hanford Site contractors were recognized with a three-star award for their leadership in the procurement and use of sustainable information technology products. The awards were given to CH2M HILL Plateau Remediation Company, Mission Support Alliance, and Washington River Protection Solutions by the Green Electronics Council and managers of the Electronic Product Environmental Assessment Tool label. From left to right: Erik Anderson (Mission Support Alliance), Carla Combs (Mission Support Alliance), Tammy Maruska (Department of Energy), Michelle Rehberg (Mission Support Alliance), Nitya Chandran (Washington River Protection Solutions), Chris Shannon (Mission Support Alliance), Todd Eckman (Mission Support Alliance).*

**For the second year in a row, three Hanford Site contractors received awards for their leadership in the procurement and use of sustainable information technology products.**

The three-star award was given to CH2M HILL Plateau Remediation Company (CHPRC), Mission Support Alliance (MSA), and Washington River Protection Solutions (WRPS) by the Green Electronics Council and managers of the Electronic Product Environmental Assessment Tool (EPEAT) label. The council recognizes companies for their efforts to reduce costs while taking steps to protect the environment and reduce greenhouse gases.

EPEAT is a ranking system that helps companies compare and select office equipment based on the equipment's environmental attributes. The equipment includes monitors, copiers, computers, fax machines, and tablets.

MSA tracks the purchase of electronic products for use by all contractors at Hanford. Ninety-nine percent of the purchased electronics meet the EPEAT standard and are environmentally-friendly. This will result in an estimated reduction of 580 metric tons of primary materials; the avoidance of disposal of 4.7 metric tons of hazardous waste; the elimination of 18.6 metric tons of solid waste; and a savings of more than 1.8 million

kilowatt hours of electricity – enough to power 146 average-sized homes for a year.

“It’s a great honor to receive this award for the second year in a row,” said Todd Eckman, MSA vice president for Information Management. “As the site integrator for the Department of Energy, we take pride in finding products that are environmentally friendly, energy efficient and reduce costs. This award indicates that we are making a positive impact on the environment.”

The contractors partnered to select appropriate products that help reduce the carbon footprint, reflecting the Hanford community’s commitment to environmental awareness.

Award winners were recognized for their purchases in four information technology product categories: personal computers and displays, imaging equipment, mobile phones, and televisions. Award winners earned one star for each product category in which they committed to purchasing EPEAT products. \*





**Workers with HPMC Occupational Medical Services (HPMC) provide health care to more than 7,500 workers, covering a wide scope of services to ensure Hanford Site workers' well-being. They strive to provide superior-quality patient care and to innovate best practices, programs and services to deliver the highest possible standard of care.**

"Nothing matters more at HPMC than providing high-quality care and an exceptional patient and customer experience," said Jill Conrad, the DOE program manager with oversight of HPMC.

During office visits, patients can expect to receive high-quality care; to be listened to carefully and have their concerns taken seriously; to be treated with respect, honesty, and integrity; and to be cared for by a highly committed, customer-focused team.

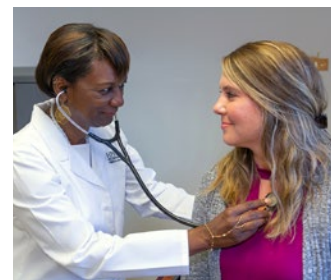
Medical services include risk-based medical examinations, first-aid care, fitness-for-duty and return-to-work evaluations, infection control, and immunizations.

Each fall, HPMC offers free flu vaccines to all badged employees. HPMC has helped to reduce illnesses and time away from work, providing over 3,000 doses annually.

An example of the HPMC team's innovation is its Exposure Response Team, a dedicated team of medical professionals. In the event of a potential chemical or radiological exposure to workers, the Exposure Response Team immediately convenes to discuss the event and provide immediate care and information to the medical evaluations team. HPMC medical staff then contacts workers the following day to check on them.

"Immediate communication between the members of the medical team regarding the nature and type of an exposure event is crucial in determining a timely and appropriate medical response," says site occupational medical director, Dr. Karen Phillips. "Continuing the communication with the worker after the event is also important in ensuring appropriate follow-up for the well-being of the worker."

Recognizing that lifestyle and behavioral risk factors significantly affect employee health and productivity, HPMC has developed a comprehensive occupational health and wellness program. Programs focused on such issues as weight management and nicotine cessation have helped improve the overall health and well-being of the Hanford workforce, with over 500 classes given since 2012. In addition, industrial rehabilitation services such as ergonomics, injury prevention workshops and fitness assessments allow HPMC to help contractors mitigate risk of injury and safely return workers to duty. \*







# VIT PLANT COLLABORATES WITH COLUMBIA BASIN COLLEGE ON TRAINING LAB

*Chemists train at a Columbia Basin Community College laboratory with equipment that will eventually be transferred to the Hanford Waste Treatment and Immobilization Plant's Analytical Laboratory. The lab at the college allows chemists and other specialists to train with the same equipment for the Waste Treatment Plant Analytical Laboratory in support of Department of Energy's (DOE) plans to begin treating tank waste through its Direct Feed Low-activity Waste vitrification approach.*

**Chemists are developing processes for analyzing Hanford tank waste before it's turned into glass inside the Waste Treatment and Immobilization Plant (WTP), or Vit Plant.**

The work is happening inside a 3,300-square-foot laboratory at Columbia Basin College in Pasco, Wash. Waste Treatment Plant contractor Bechtel National Inc. set up the lab at the college so chemists and other specialists can train with the very same equipment that will be used inside the WTP Analytical Laboratory in support of DOE's plans to begin treating tank waste through its Direct Feed Low-Activity Waste vitrification approach.

"We are really in the phase where we are now starting that transition to operations, as so many people have worked for so long to enable us to achieve," said Brian Vance, DOE Office of River Protection manager. "This laboratory is another major step in the direction of moving from a focus on construction to operations."

While WTP chemists develop the methods, processes, and procedures inside the college laboratory, work crews perform facility systems startup and testing at the Analytical Laboratory.

During the Waste Treatment Plant's cold commissioning phase, a waste-like simulant will run through the Low-activity Waste (LAW) facility. Then a hot commissioning phase will begin turning low-activity waste into sturdy glass.

**"IT'S GREAT THAT OUR CAMPUS CAN BE A COMMUNITY RESOURCE FOR COMPANIES WHO ARE TRAINING THE NEXT GENERATION OF HANFORD'S WORKFORCE."**

— Dr. Rebekah Woods, Columbia Basin College president





*As a part of the training for Department of Energy's plans to treat tank waste through its Direct Feed Low-activity Waste vitrification approach, chemists and other specialists use specialized equipment inside a 3,300-square-foot laboratory at Columbia Basin College. This equipment will eventually be transferred to the Hanford Waste Treatment and Immobilization Plant's Analytical Laboratory.*

"We are in the early hiring and training phases for the laboratory technical staff that will eventually be transferred from the Columbia Basin College lab to the Waste Treatment Plant's large Analytical Laboratory at the Hanford Site," said Rick Holmes, WTP Project site director and Waste Treatment Completion Company general manager. "Through our work here at Columbia Basin College, we are preparing the future workforce for the plant's cold and hot commissioning phases."

Dr. Rebekah Woods, Columbia Basin College president, said it's an honor to know that work supporting the Hanford cleanup mission is happening at the community college.

The Waste Treatment Plant's Analytical Laboratory's key function is to confirm that all glass produced by the low activity waste facility meets regulatory requirements and standards. The Direct Feed Low-activity Waste approach is expected to allow treatment of low-level waste to begin by a court-ordered milestone date of 2023. \*

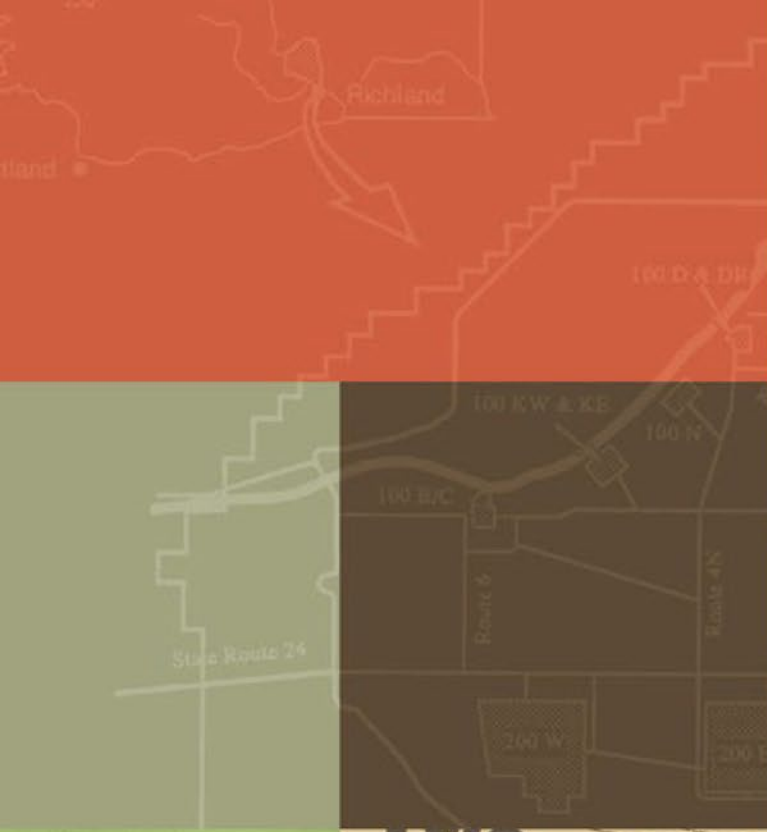
**"THROUGH OUR WORK  
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*– Rick Holmes, WTP Project site director and Waste Treatment Completion Company general manager*





# HANFORD: CREATING A NEW LEGACY



From the rush of making plutonium during World War II to its current mission of cleaning up after more than 40 years of plutonium production, the Hanford Site has a unique and vibrant history. The Hanford Speakers Bureau offers groups a firsthand view of how Hanford got its start, how the site participated in the Cold War and the importance of completing cleanup in a safe and responsible manner. Participants will learn about the one-of-a-kind challenges, cleanup accomplishments, innovative technologies, and important processes taking place to protect workers and the environment.

To schedule a Speakers Bureau presentation, contact Patrick Conrad with Mission Support Alliance at [Patrick\\_J\\_Conrad@rl.gov](mailto:Patrick_J_Conrad@rl.gov) or 509-376-5713.